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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/708,331	02/24/2004	Chin-Kun Hsieh	ADTP0071USA	2330
27765	7590	09/14/2005	EXAMINER	
NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION P.O. BOX 506 MERRIFIELD, VA 22116			CRANSON JR, JAMES W	
			ART UNIT	PAPER NUMBER
			2875	

DATE MAILED: 09/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/708,331		HSIEH ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	James W. Cranson		2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 24 February 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6, 8, 9 and 12 is/are rejected.
- 7) ☒ Claim(s) 5, 7, 10 and 11 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### DETAILED ACTION

The following title is suggested: DIRECT BACK LIGHT WITH HEAT EXCHANGE.

#### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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The following claims have been rejected in light of the specification, but rendered the broadest interpretation [MPEP 2111]. Applicant should positively cite the structural limitations to be given full patentable weight within an apparatus claim.

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Claims 1 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by USPN 5,993,027 to Yamamoto et al.

Yamamoto discloses a backlight unit with means to transfer heat between the backlight unit and an external environment.

Regarding claim 1:

A backlight unit(0) comprising: a light source generator (4) positioned in a backside of a display panel(figs 3,4) for providing light beams to display panel(figs 3,4); a diffuser(2) positioned between the light source generator and the display panel for uniformly scattering light beams from the light source generator to display panel (figs 3,4); housing(1) enclosing light

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source generator and connecting to diffuser (fig1) for reflecting the light beams to the diffuser, the housing further comprising a heat pipe (7a, 7b) for being a heat transfer interface between back light unit and an external environment (column 3, lines 15-24).

Regarding claim 8:

Yamamoto discloses that the light source generator comprises a fluorescent tube.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-4, 6, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 2003/0039113 to Murr et al in view of USPN 6,089,739 to Yamamoto et al.

Murr in a backlight unit with a heat transfer interface discloses the claimed invention except for not having a diffuser between light source generator and the display panel. Yamamoto

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teaches the use of a diffuser between light source generator and the display panel in a backlight unit with a heat transfer interface.

It would have been obvious to one of ordinary skill in the art at the time of invention to provide Murr with a diffuser between the light source generator and the display as taught by Yamamoto. The reason for using the diffuser to diffuse the light for a more uniform light distribution.

Regarding claim 2, according to claim 1:

Murr as modified above has a heat pipe (7, 9) composed of metal materials

Regarding claim 3, according to claim 1:

Murr as modified above has a heat pipe (7, 9) composed of metallized (steel) materials.

Regarding claim 4, according to claim 1:

Murr as modified above has a heat pipe (7, 9) composed of solid heat conductive pipe.

Regarding claim 6, according to claim 1:

Murr as modified above has a heat pipe (7, 9) connected to external environment (figure 1)

Regarding claim 9, according to claim 1:

Murr as modified above has a heat pipe (7) directly below fluorescent tube and surface of heat pipe contains radiative reflective layer (10).

Regarding claim 12, according to claim 1:

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 2003/0039113 to Murr et al in view of USPN 6,089,739 to Yamamoto et al. as applied to claim 1 above, and further in view of US 2005/0007755 A1 to Yu et al.

Murr as modified by Yamamoto does not have a prism sheet on the diffuser.

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Yu teaches in a direct type backlight unit having a prism sheet and diffusion sheet on diffuser.

It would have been obvious to one of ordinary skill in the art at the time of invention to provide modified Murr with a prism sheet and/or diffusion sheet on diffuser.

The reason for using the prism sheet and/or diffusion sheet on diffuser is to diffuse the light for a more uniform light distribution.

*Allowable Subject Matter*

Claims 5, 7, 10 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Claim 5 has a heat pipe that is a hollow heat-conductive pipe, and an inner portion of hollow heat-conductive pipe that contains a cooling liquid. This combination of limitations is not found or taught in the art of record.

Claim 7 has a heat pipe that is positioned at contact point of diffuser and an up-side of housing for avoiding affecting paths of light beams. This combination of limitations is not found or taught in the art of record.

Claim 10 has that surface of heat pipe is an arc surface for reducing a rate of light beams emitted from fluorescent tube being reflected back to fluorescent tube. This combination of limitations is not found or taught in the art of record.

Claim 11 has a contact surface of heat pipe and external

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environment that is a rough surface, rough surface comprising a plurality of sharp teeth so that a radiating area is increased. This combination of limitations is not found or taught in the art of record.

*Conclusion*

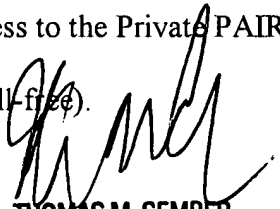
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure are 6,697,130 to Weindorf et al., 6,417,832 to Skinner et al. and 6,847,173 to Berthou et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James W. Cranson whose telephone number is 571-272-2368. The examiner can normally be reached on Mon-Fri 8:30A.M.- 5:00P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandy O'Shea can be reached on 571-272-2378. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
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THOMAS M. SEMBER  
PRIMARY EXAMINER